

Electronic Literature Seen from a Distance The Beginnings of a Field

by Jill Walker Rettberg

This paper outlines the development of the hypertext fiction community that developed in the United States of America from the late eighties and onwards. This community was separate from the interactive fiction community (and largely thought of its works as different from “games”) and largely revolved around the use of Storyspace, a software tool for creating electronic literature, and later, around Eastgate, a publisher of hypertext fiction and the company that developed Storyspace. While some work was written and published in Hypercard and other systems, the technology of a dominant software authoring tool and of the mechanics of distribution (diskettes sold by mail order) formed the hub of the electronic literature community during this period. There was little or no communication with other communities, such as the IF community or digital art communities. With the advent of the web, new authoring and distribution channels opened up, and this hub gradually lost its dominance. The transition from this relatively centralised and explicit community to the networked communities and scattered individuals of the Web is an interesting one to explore. I will base this research on historical websites and articles published at the time, as well as on interviews.

[Introduction](#)

[The Words We Use to Describe the Field](#)

[Beginnings](#)

[Citations: What is Referenced?](#)

[Beginnings: Moving Closer](#)

[Five Categories of Early Electronic Literature](#)

[Conclusion](#)

[Acknowledgements and Further Information](#)

[Notes](#)

[Works Cited](#)

Introduction

When did electronic literature begin? The answer to this question depends upon what, exactly, this field of practice includes. Does electronic literature begin with Michael Joyce’s hypertext fiction, *afternoon, a story*, first presented in 1987 and published in 1990? Does it begin with bp Nichol’s poems written in BASIC in 1984? Or with *Colossal Cave Adventure*, released in 1976? Perhaps it begins with the love letter generator Christopher Strachey wrote for the Manchester Mark I in 1952 (Wardrip-Fruin)? Or as Lori Emerson recently proposed in her [blog-post](#) (2011), perhaps electronic literature only began when the [Electronic Literature Organization](#) was established in 1999, and the term was truly institutionalized?

This article starts to map one beginning of what we have later come to call electronic literature. I wanted to write a history of the early days of hypertext fiction in the United States in the late 1980s and early 1990s, particularly looking at the ways in which a community formed around these works. I had thought this would be an easy task. The

most important works of the time are cited so repeatedly in so many papers in the field that we all know their names. Michael Joyce's *afternoon, a story*, Shelley Jackson's *Patchwork Girl* and Stuart Moulthrop's *Victory Garden* are far more frequently cited than any other works of electronic literature (cf. fig. 2). Yet the more I investigated the period, the more works I discovered that I had not previously heard of. Many works of electronic literature were published prior to *afternoon*, and there were several other publishers in addition to Eastgate, though Eastgate alone has survived in the US. I will return to some of these later in this paper.

My first publication on electronic literature was a close reading of *afternoon* (Walker). This paper, in contrast, will not attempt to read or interpret any individual works. Instead I want to try to read them as a field, from a distance. In my research, I have used the [ELMCIP Knowledge Base for Electronic Literature](#) (ELMCIP: [Electronic Literature as a Model of Creativity and Innovation in Practice](#), cf. [Acknowledgements](#)) as a tool for discovering and documenting works, criticism, events and publishers, and also for understanding connections and frequencies. I also use Google's Ngram viewer that allows the visualisation of search results across a large number of digitized books. Using databases such as these gives us new opportunities for a kind of "distant reading" of literature, as Franco Moretti advocates in *Graphs, Maps, Trees: Abstract Models for Literary History* (1). A complete "distant reading" of the field of electronic literature is not possible at the present time. Despite the increase in databases on electronic literature, and the wealth of information already available in them, we are very far from having a complete overview of all electronic literature. This paper, then, is simply a start, a preliminary attempt to map some of the early years of electronic literature in one region of the world: the mid-1980s to the mid-1990s in the United States. For literary works written for computers this was a time of transition from a time when very few and largely disconnected works were created, to a time when many works were created every year, and the people who create those works see themselves as contributing to a field. This transition is experienced by every new genre or artistic form goes through as it develops.

The Words We Use to Describe the Field

Before we delve into the electronic literature of the late 1980s, let's consider the term itself. In this paper, I choose to follow the Electronic Literature Organization's broad and inclusive definition of electronic literature as "works with important literary aspects that take advantage of the capabilities and contexts provided by the stand-alone or networked computer." Yet as Lori Emerson points out, this term and definition in itself brought together genres that in many ways were seen as separate in the early years. Emerson writes in her blog-post "On e-literature as a field" that "what did not exist until the founding of the [Electronic Literature Organization](#) in 1999 (thanks to [Scott Rettberg](#), [Robert Coover](#), and Jeff Ballowe) is a name, a concept, even a brand with which a remarkably diverse range of digital writing practices could identify: electronic literature."

While it is difficult to pinpoint the date of birth of electronic literature as such, we can say something about the emergence of the terms used to describe literary works that use computational capabilities. I generated (fig. 1) using Google's Ngram viewer, asking it to compare the frequency of the terms hypertext fiction, electronic literature, digital literature, digital poetry and e-poetry in books published from 1985 to 2008. Unfortunately it is not currently possible to search more recent books. As the graph shows, Emerson is right in that the term "electronic literature" (marked by the red line) has come to dominate in the period after the Electronic Literature Organization was established. However, in the corpus of print books digitized by Google, at least, both "hypertext fiction" and "digital poetry" are close at its heels, with digital poetry, in particular, looking poised to catch up very soon. The term "e-poetry", although the title of a significant conference in the field since 2001, is not frequently used in print literature, and its purple line is almost invisible, lying flat against the bottom of the chart.

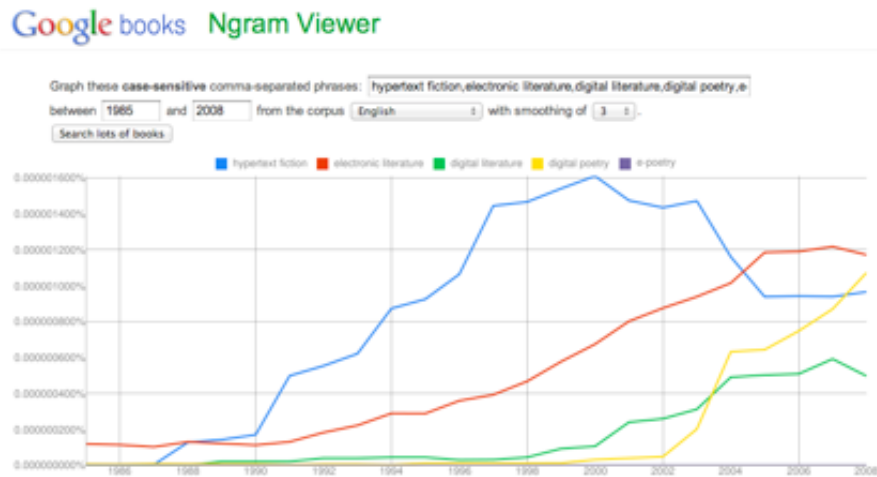


Fig. 1. Google's Ngram Viewer allows us to graph the frequency with which different terms for electronic literature were used in books published between 1985 and 2008. The blue line shows hypertext fiction, the red electronic literature, the green digital literature, the yellow digital poetry and the purple line (flat against the bottom of the graph) is for e-poetry.
Click the image to see at full size.

As expected, hypertext fiction (the blue line) was the more popular term in the 1990s, but it also retained its dominance for several years into the 2000s. This could show that the new term “electronic literature” took time to gain general acceptance, or it could also simply be a by-product of the slow pace of scholarship and book publishing. By 2008, the term “electronic literature” is still not as popular as “hypertext fiction” was at its peak, although the combined use of all these terms is growing steadily. It is interesting to see how high the use of “hypertext fiction” remains, even after the dominance of “electronic literature”. The rapid rise of “digital poetry” is also particularly striking.

It may seem surprising that the term “electronic literature” grows in popularity well before the establishment of the ELO in 1999. However, almost all uses of the term “electronic literature” before the late 1990s refer to research literature that happens to be in electronic form^[1], not to literary works. There are some important exceptions, however. A notable early use of the term in its current usage is from 1985, in an article by Jay David Bolter titled “The Idea of Literature in the Electronic Medium” (25), and Bolter uses the phrase again in the 1991 edition of *Writing Space*. Ted Nelson's book *Literary Machines* only uses the exact phrase “electronic literature” twice, and in contexts that primarily refer to non-fiction, but still discusses creativity, writing and authorship and likely had a great deal of influence on thinking in literary terms. A 1992 article in *The Print Collector's Newsletter* mentions that Eastgate publishes electronic literature. In 1995, Robert Kendall uses the term in an article that presents an overview of electronic literature at the time, presciently titled “Writing for the New Millennium: The Birth of Electronic Literature.”^[2] So the term “electronic literature” was in use well before 1999.

A graph like the one shown in Figure 1 comes with its own biases, of course. It only shows how often the terms are used in print, and in a field like electronic literature, a lot of important discussion happens online. While Google has digitised 5.2 million books, that is still only around 4% of all books published (Michel et.al.). Also, we know that most uses of “electronic literature” from before 1999 did not refer to literary works. Although my samples show that the balance shifts after this, we lack a reliable way of filtering out current uses of “electronic literature” that do not refer to literary works using computation. It is also likely that many books that use one term also use another, so that some of the books counted are duplicates. The data that the Ngram Viewer uses can be downloaded, so with time and some programming skills some but not all of these problems could be addressed.

The graph also tells us nothing about which works these books are discussing. Although Google will allow you to click through to individual search results, the whole book is rarely shown. Instead you are only able to see a small section of a page.

Beginnings

Some of my inspiration for this method of studying a field comes from reading Franco Moretti's book *Graphs, Maps, Trees: Abstract Models for a Literary History*, where he talks about "distant reading" based on large quantities of data about a literary system. For instance, he looked at publication data from different countries, specifically the dates of publication of early novels. From this, he saw that it took about twenty years for the early British novel to grow from a point where only five or six novels were published annually to a critical mass with new novels being published more than once a week. Moretti ran the same test against other countries' statistics, and found that this twenty year cycle can be seen to repeat itself in a range of countries, though with different starting points according to when novels began to be published in that country: "See how similar those shapes are: five countries, three continents, over two centuries apart, and it's really the same pattern, the same old metaphor of the 'rise' of the novel come alive: in twenty years or so (in Britain, 1720-40; Japan, 1745-65; Italy, 1820-40; Spain, 1845- early 1860s; Nigeria, 1965-80), the graph leaps from give-ten new titles per year, which means one new novel every month or two, to one new novel *per week*" (Moretti 5). This is the point where the novel has gone from being a novelty to being "a necessity of life" (5).

Has electronic literature gone through a similar cycle? We cannot, today, answer this question accurately. Although there are an increasing number of databases documenting electronic literature, including the ELMCIP Knowledge Base for Electronic Literature, which I am involved in, none of these is anywhere near completely documenting the field. Libraries have not documented electronic literature in any systematic way, usually only cataloguing works that have been published in fairly traditional ways, on physical media with ISBN numbers. Visibility in the traditional literary system, whether through libraries or bookshops, is a major reason why Eastgate's hypertext fictions and the *Electronic Literature Collection* have been published on material media (the latter can also be accessed online). Most works of electronic literature are only published online, some completely independently and some in online journals. At the moment, there is no complete overview of all works of electronic literature.

But we can make some assumptions. In 2011, certainly there were new works of electronic literature published at least every week, and probably far more often. In January 2012, the ELMCIP Knowledge Base had 58 records of creative works of electronic literature published in 2011, and there are records of more than 30 creative works every year from the year 2000 onwards.

This in itself only means that contributors happen to have entered this many records. Records are entered according to the contributors' interests, and the Knowledge Base is open to all who are genuinely interested in contributing. Project members document events we attend and enter references from critical works we read and to creative works we find, and we encourage other scholars and practitioners in the field to contribute works they are interested in³. We are also working to have teachers use the Knowledge Base in creating curricula and in teaching, and in these cases teachers and students document areas of the field that are on the curriculum. ELMCIP is a European project, so we have recruited contributors from several European countries, aiming for a broader linguistic and cultural coverage. So we have many mechanisms for attempting to grow the Knowledge Base broadly and with as little bias as possible. However, there is no guarantee that the selection of works in the Knowledge Base is representative. It does show that there were at least 58 works of electronic literature published in 2011, though, and probably many more that have not yet been registered. Moretti argued that the novel was well established when at least one novel was published every week. With 58 documented works published in 2011, 45 of which are in English, and presumably many more works not yet documented in the ELMCIP Knowledge Base, we are definitely have reached that point for electronic literature in English, though not within all languages.

Twenty years ago, in 1991, hypertext and other genres of electronic literature were not quite new, and although not many of the early works are now discussed, there were at least one or two dozen works being published each year. By 1986, and maybe earlier, five or six works of electronic literature were being published each year, even without

including interactive fiction in the count. By the early 1990s, several publishers existed, including Eastgate, Diskotech, Hyperion SoftWords, Voyager, and Electronic Hollywood^[4]. With the advent of the Web, self-publishing became even easier, and a number of online journals appeared that published hypertext fictions. By the turn of the century influential organizations such as the Electronic Literature Organization, [trAce](#), and [E-Poetry Center](#) were established. So if we are to follow Moretti's twenty year time line for new genres, 1986-2006 appears to be a reasonable span, although the cycle may have been even briefer for electronic literature.

This is only a preliminary sketch of such a cycle though. To truly map it out, we would need a dataset that was approximately complete. We would want to consider different languages and different nationalities. We should compare the adoption of the different genres, such as kinetic poetry, hypertext fiction, interactive fiction, literary installations and so on, and consider whether each genre grew independently or whether it makes more sense to see electronic literature as a whole.

Citations: What is Referenced?

As I mentioned earlier, I began my research with the assumption that Michael Joyce's *afternoon, a story*, really was the "granddaddy" of the field, as Robert Coover wrote in *The New York Times* in 1992. *afternoon* has been anthologised by Norton, is substantially analysed and discussed in dozens of academic treatises and is taught or at least mentioned in almost every course taught on electronic literature. I checked citations for *afternoon* and a number of other works of electronic literature across several scholarly databases. Michael Joyce's hypertext fiction *afternoon, a story* is clearly the most frequently cited work of electronic literature, followed by Shelley Jackson's *Patchwork Girl*. These two works tower far above the rest of the field.

Fig. 2. shows citations of each of the three most-cited Eastgate works and of three other frequently discussed works of electronic literature. I sampled many works in order to find frequently cited ones. Finally, I chose the two that won the [2001 ELO Awards for poetry and fiction](#), John Cayley's *windsound* and Caitlin Fischer's *These Waves of Girls* respectively, assuming that the prize would have made them likely to be highly cited. Then, having noticed that works published in the *Electronic Literature Collection* (ELC) appear to be frequently cited, I searched Google Scholar for "electronic literature collection", and saw that Brian Kim Stefans' *The Dreamlife of Letters* had more citations (at least in articles indexed by Google Scholar) than any other works in the two volumes of the ELC. Rather than this somewhat heuristic method of finding the most frequently discussed works of electronic literature, I would have liked to have had a more complete dataset in the Knowledge Base and to have simply run a query of the most frequently cited works there, but we neither have a complete dataset nor the ability to run such a query yet. So, forced for the moment to be satisfied with this more approximate method, I then took these six works and searched five different scholarly databases for citations: MUSE, ProQuest dissertations and theses, Google Scholar, ELMCIP Knowledge Base, and the ACM Digital Library.

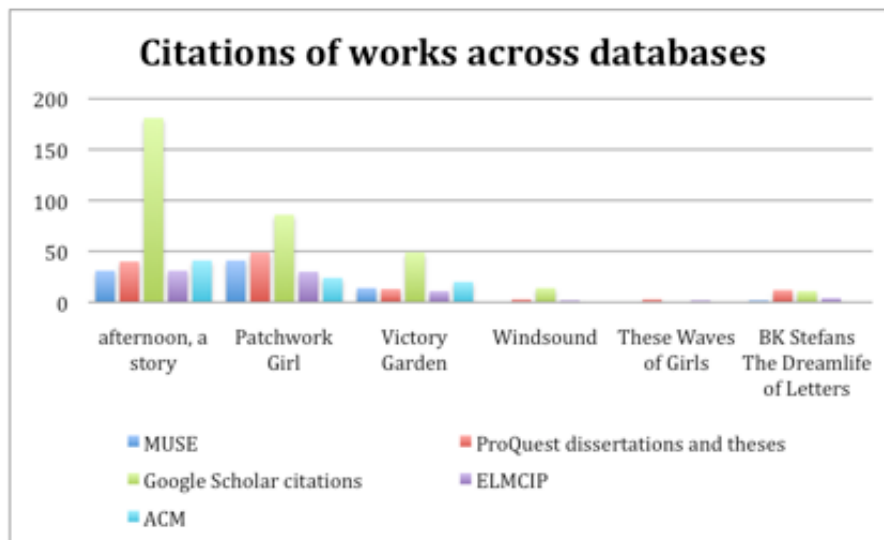


Fig. 2. Chart showing number of citations for selected works of electronic literature.

The first database is MUSE, which provides access to scholarly journals in the humanities and the social sciences. It is represented by the blue columns. ProQuest, indicated by the red columns, indexes dissertations and theses as well as a broad range of scholarship across disciplines, though with less emphasis on the sciences – for example, publications from the ACM Hypertext conference series are not indexed here. The green column shows Google Scholar citations. Google Scholar shows far more references to *afternoon*, in particular, than the other databases do. This is probably because Google Scholar indexes scholarly publications across all fields, not just the humanities, and it also includes sources not included by MUSE and ProQuest, such as peer-reviewed papers on conference websites and in open access research archives. The ACM (Association for Computing Machinery) Hypertext conferences were particularly important in the early years of electronic literature and *afternoon* was first presented at their inaugural conference, The Conference on Hypertext and Hypermedia (Chapel Hill, Nov 13-15, 1987) and frequently cited in their publications. The turquoise column, which represents citations in the ACM Digital Library, shows that the Eastgate titles did receive many citations in that community, but the vast number of references found by Google Scholar can still not be accounted for solely by ACM references. It appears that *afternoon*, in particular, has many references from researchers outside of the humanities journals tracked by MUSE and ProQuest and outside of the ACM conference series.

Interestingly, *Patchwork Girl* has more citations in the humanities and social science journals primarily indexed by MUSE and ProQuest. It seems that *afternoon* may have influenced a broader audience of scholars, but that *Patchwork Girl* has influenced literary scholars more heavily. Finally, the purple column shows references in the ELMCIP Knowledge Base, which only tracks the field of electronic literature, but which is not yet complete. At the time of writing, the ELMCIP Knowledge Base is only a little over a year old.

While I have made every effort to find exact figures, there are some possible error sources. When referring to Google Scholar I am not referring to the total number of hits returned when searching for “afternoon, a story” and “Michael Joyce”, for instance, but the number of citations specifically assigned to that work by Google Scholar. Sometimes Google Scholar has several versions of the same work, in which case I have collated the results. I have not checked each of the 181 citations of *afternoon* reported. In most cases, however, the number of results was small enough that I could easily scan through the titles and abstracts and eliminate any false positives. “Windsound” is a variable used in sound installations discussed in some ACM publications that have nothing to do with John Cayley’s work, for instance.

In conclusion, the three works published by Eastgate are clearly far more frequently referenced than even the most discussed later works in the field. And *afternoon* is not even the first work of electronic literature, though a casual reader of articles in the field

might be forgiven for thinking so. Why did these particular works become a common reference point for scholars and students for the next 25 years? There were alternative possibilities. Why didn't bp Nichols' work "*First Screening: Computer Poems* (1984) start a movement? Why are there no critical discussions of Judy Malloy's database narrative *Uncle Roger*, published on the WELL (Whole Earth 'Lectronic Link) in 1986/97? Would electronic literature have been different today if Nichols or Malloy had been crowned as the grandparent of the field?

In 1992, Robert Coover famously called Michael Joyce's *afternoon, a story* (1990) the "granddaddy of full-length hypertext fictions" (Coover "The End of Books"), writing only five years after *afternoon* was first presented in public (Bolter and Joyce 1987)^[5]. Since then, both *afternoon* and Coover's description of it have been cited repeatedly in accounts of the history of electronic literature, whether in books, articles or teaching. The period and its body of work have been called "the Storyspace school" (Aarseth 85; Hayles) or "the Storyspace era" (Raley 194; Kirschenbaum), because the field was dominated by works written in the Storyspace software and published by Eastgate. As we have seen, this may not have been entirely true as there were other publishers and self-publishing at the time, but this is how the period looked in hindsight. Later, Coover dubbed these pre-web years "the golden age" ("Literary Hypertext"), in part because of the dominance of text. Early hypertext fictions, Coover wrote, gave careful readers a sense of "losing oneself to a text . . . until clicking the mouse is as unconscious an act as turning a page, and much less constraining, more compelling." ("Literary Hypertext")

How did we come to accept *afternoon* as the unequivocal "granddaddy" of electronic literature (not just full-length hypertext fictions, as Coover in fact wrote)? Although earlier works are regularly mentioned when scholars and teachers recount the history of electronic literature, *afternoon* has certainly become a major reference point and is frequently assumed to be the first work of "real" electronic literature. This amplification and reinforcement of certain ideas, works and citations is typical of a print-centric culture, Elizabeth Eisenstein wrote in her history of print, but perhaps we should say, more broadly, that it is typical of a culture such as ours that privileges that which is recorded, whether analog or digital; written, aural or visual.

Beginnings: Moving Closer

Moretti calls for "distant reading" of literature, and so far that is what I have done in this paper. I have graphed the use of terms in the field over time, and proposed a twenty year cycle from 1986 to 2006 which marks the movement from works of electronic literature being rare events to the time when they have critical mass and new works are published at least once a week.

Electronic literature began in many places, at many times. In 1952, in Manchester, computing pioneer Christopher Strachey created a love letter generator (Wardrip-Fruin). In 1966, at MIT in Cambridge, Massachusetts, Joseph Weizenbaum created a simulated conversation agent, *ELIZA*. In 1976 Will Crowther, another Cambridge resident who worked at a technology company, created *Colossal Cave Adventure*, the first textual adventure game, which was then further developed by Stanford graduate student Don Woods.

All these early works were created by computer scientists who were playing with the technology. They did not see themselves as authors, on the contrary, Strachey, Weizenbaum and Crowther all expressed surprise at their experiments being taken seriously by people. They had not intended to create a new form of literature, and were not, as far as we know, building on or even aware of other work in the field. Their work did not immediately start an avalanche of new literary forms. Indeed, they are only recognised as starting points of electronic literature in hindsight (Wardrip-Fruin).

Alongside the experiments created by computer scientists there were non-linear literary experiments that have also been seen as "proto-hypertexts", and as the starting points of electronic literature—but these were far and few between. Frequently cited examples include Nabokov's *Pale Fire* (1962), Saporta's *Composition No. 1* (1963), Cortazar's

Hopscotch (1998) and Pavić's *Dictionary of the Khazars* (1988).

There are also examples of works typically classified as visual art that could, in hindsight, equally be called electronic literature. Len Lye's animated texts in film (1937) are one example (Rettberg). Much later, Jenny Holtzer's *Truisms* (1977), slogans and poetic lines of text displayed on tickers on Times Square and elsewhere could certainly have been interpreted as literature.

But none of these works was seen as connected to other works at the time. Although they are important in retrospect, they did not shape a community of electronic literature.

One community of experimental, electronic literature and art in the 1980s met on the WELL (Malloy 1991). Video and performance art curator Carl Loeffler coordinated the Art Com Electronic Network (ACEN) on The WELL where ACEN Datanet, an early online publication, would soon feature actual works of art, including works by John Cage, Jim Rosenberg, and Judy Malloy. Rosenberg's programmatic poetry *Diagrams No. 4* were published here, as was Malloy's database narrative *Uncle Roger*, which was "a hyperfictional narrative database". Malloy's works were also exhibited in physical art exhibitions.

On the opposite coast of the USA, introductions were made through shared friends, by reading papers and journals and at conferences (such as the MacAdemia conferences in Philadelphia in 1988 and at Brown in 1989) and the ACM Hypertext conferences in 1987 and 1989. Stuart Moulthrop describes how at the '89 Hypertext conference he and John McDaid, Michael Joyce and Jay Bolter sat at a computer connected to the internet and searched for other people doing similar things. They found Judy Malloy's work:

It was just like blues men going to each other's performances. Yeah, alright, oh darn that's good. Oh, we're not that good. So we really recognized that she was somebody, and she was part of a community out there in the Bay Area that was really important and exciting. I can remember coming away from that moment thinking that, you know, there might be a real hope for what we were trying to do because other people were doing it. (Moulthrop, personal interview)

In an interview with Ransom Center archivist Gabriela Redwine, Michael Joyce described how he came to realize that there was a community of readers passing works around informally even before there was a publisher or any of the institutions that conventionally support literature:

So—you had a physical community [of readers], like a book community. Same thing—similar story—with Jane [Yellowlees] Douglas when she first called me up and said I'm writing my dissertation on *afternoon*. I said, "That's impossible, you can't be, it's not published." She said, "Well, no, but I have it, you know. I've gotten it through so-and-so." So we were pretty much aware there was a community of readers out there. (Joyce)

By the late eighties, several tools were available for creating electronic literature, including HyperCard and Storyspace. Additionally, many practitioners did their own programming, such as Nichols, Malloy and Rosenberg.

Eastgate became a central node in the hypertext fiction communities, as the primary publisher of literary hypertext. In an interview with Judy Malloy, Bernstein explained that he saw one of Eastgate's goals as providing shared references for the growing hypertext research community. The hypertext research field was growing, but before the Web it was characterised by diverse, locally developed authoring systems. By publishing a series of hypertext fictions written in the same system, Eastgate managed to create a shared set of references: "These hypertexts helped focus discussion. For the first time, if you and I wanted to talk about the craft of hypertext writing, we could talk about a specific work we'd both read, a work with some ambition and scope, a work we could admire and with which we might disagree" (Malloy and Bernstein).

As previously mentioned, Eastgate succeeded in creating what we may call a canon of

electronic literature, and works published by Eastgate in the early 1990s are still taught and written about today. At the time, there were other publishers, including Voyager and Electronic Hollywood, but they no longer exist, whereas Eastgate, small as it is, and by no means mainstream, is still selling copies of those same hypertexts. Eastgate has been frequently criticised because it does not make works available on the Web but instead only distribute works on disk, and because works have not always remained accessible on current operating systems. However, it is clear that works published by Eastgate in the early 1990s have been more frequently cited and taught than contemporaneous works that were self-published or published by publishers that later shut down.

Although originally a software company, when marketing electronic literature, Eastgate modelled itself on a traditional literary publishing model. This allowed them to fit into a literary system. Despite their works being published on diskettes and CD-ROMs instead of on paper, they had ISBN numbers and were packaged so they could easily slip into a bookshelf. By claiming the position of a small literary publisher, Eastgate found a way to give legitimacy to electronic literature. Bernstein himself expresses this quite directly: "I think that the presence of a publisher did matter, especially to critics, ironically. In particular the fact that there was a publisher that looked like a recognisable sort of organization gave the critics a chance to pitch their stories to their editors, and editors who were inclined to find a technological line, or at least not repulsed by the idea of literary machines, could be convinced, since there was something that looked like a small press. That was important." (Interview, 29 June 2011)

In addition to publishing Storyspace works, Eastgate also published works written in other authoring systems, and in some cases, ported work written in other systems to Storyspace. For instance, Malloy's *Penelope* was first written in BASIC, but Bernstein gave it the "Storyspace look and feel" and incorporated generative aspects of the work into Storyspace when the work was republished by Eastgate in 1993 (Malloy, email to author). In this way, Eastgate served to gather much diverse activity, incorporating earlier works into its catalog, including pioneering authors on The WELL like Judy Malloy and Jim Rosenberg.

At the same time, hypertext fiction was beginning to enter the college classroom. Among the most well-known teachers of hypertext of the time were George Landow and Robert Coover at Brown University, and Janet Murray who taught at MIT at the time. Landow, Coover and Murray wrote extensively about the field as well (Landow's book *Hypertext* was published in three print editions, in 1992, 1997 and 2006, as well as in a hypertextual edition published by Eastgate in 1994), and each is frequently cited.

Five Categories of Early Electronic Literature

Why are certain works more frequently cited than others? Obviously literary quality is one answer, but contextual circumstances are also extremely important, and it is the context and the community I am interested in in this paper. Thinking about which works of early electronic literature are still remembered today and which are not we can think in terms of five categories. These categories do not correspond to genres or literary qualities, but to the ways in which works were disseminated, documented and preserved.

1. There are many examples of isolated experiments that are regularly offered as examples of proto-hypertext or very early electronic literature, although they are more often mentioned as part of an obligatory literature review at the start of a paper than they are analysed or discussed in detail. Examples are Christopher Strachey's *M.U.C. Love Letter Generator* and Weizenbaum's *ELIZA*. These works were not really intended as literature, but in hindsight have clearly literary qualities. Paper hypertexts may also be included in this category, such as Cortazar's *Hopscotch* and Nabokov's *Pale Fire*. These were not intended to be electronic literature, but in hindsight have many qualities that correspond to genres of electronic literature.
2. The second category of early electronic literature is the canon, as we might call it, the works that have been taught again and again in colleges and universities and that are frequently mentioned and discussed in scholarly works on the field. These

- correspond to a selection of what several authors have called “the Storyspace school”.
3. Works published by now defunct publishers may have received some critical acclaim at the time, but are no longer readily available and are rarely if ever mentioned in current discourse on electronic literature.
 4. Self-published works. Before the Web, self-publishing was more complicated than it is on the Web, because authors had to make physical copies on diskette and distribute these. Without dedicated points of distribution, such as through a publisher or journal or software company, wide distribution was rare and perhaps non-existent. Even after the Web, many early self-published web works are no longer available, either because the website has not been maintained, because the domain has lapsed or because the software or the web browser required to view the work is not compatible with current systems. It is true that in 2012, even Eastgate’s works from the early 1990s no longer work on contemporary computers, although they have certainly had far greater durability than most other works of that period. But because Eastgate is still in existence, there is ongoing work to create new versions of the reader software for Storyspace^[6], and to create iPad versions of selected works.
 5. Some works, as today, were *performed* on an electronic network (as was the first publication of Judy Malloy’s *Uncle Roger* in 1986, when nuggets of text were posted to discussion boards), and so of course can no longer be experienced as originally intended. There have been many works since that require synchronous experience, or that can be said to be performed as much as they are published. Works that are sent to mailing lists or that are told as a series of emails or tweets and other social networks are examples, and so are works that are constructed in MOOs, such as Coover and his students’ *Hypertext Hotel* or the literary environments in *LambdaMOO* in the early 1990s. Without careful documentation, such works are easily forgotten, as they, unlike static websites or CD-ROMs, do not exist in their original form after their original performance.

Conclusion

The works of electronic literature that are still remembered from the 1980s have enjoyed the attention of scholars, publishers, teachers and authors who have remained in the field for a long time. Although Eastgate did not begin publishing hypertext fiction and poetry until 1990s, it is the Eastgate versions of earlier, self-published works that are still remembered. Works published by now-defunct publishers are orphaned and rarely discussed, largely because they are no longer accessible. At the same time, the social networks around conferences and teaching institutions were key, as were online groups such as the ArtCom forum on the WELL. These online groups may no longer be remembered by many, but they served to connect authors and artists who then went on to receive a wider audience. I have not found any examples of solely self-published works that have been continuously discussed in the two decades of scholarship and teaching since the 1980s, although some works have been recently revived and made accessible again and are now receiving new attention, such as bp Nichol’s BASIC poems.

Working on this article I have realised how much more there is to learn about these early days of hypertext and electronic literature. What appears clear at this point is that works that were self-published have tended to be forgotten. Whether this is simply because they ceased to be available or because they were never much discussed due to a lack of social and artistic connections (i.e. nobody was aware of the works in the first place) is not easy to ascertain as the discussions, online or off, of the time are not generally archived. Of course, publishing with an established publisher was no guarantee for being written into the history books either. Voyager was a far larger company than Eastgate in the early 1990s, and many works published by them received great critical acclaim at the time^[7], but their works are no longer available. With the advent of the Web, these dynamics changed significantly, and today we also have many conferences, journals, college classes and organisations focused on electronic literature.

I have tried to use digital methods in examining the history of electronic literature, both

bibliographically looking at citations of certain works, and extracting data about the use of terms for electronic literature in printed books. We are at the cusp of being able to use far more powerful tools than these in our readings of electronic literature and of other cultural fields of practice, and I look forwards to seeing much more research conducted along these lines.

Acknowledgements and Further Information

This paper has been written as part of the ELMCIP project ([Developing a Network-Based Creative Community: Electronic Literature as a Model of Creativity and Innovation in Practice](#)), a collaborative research project funded by Humanities in the European Research Area (HERA) JRP for Creativity and Innovation. My research has relied heavily on the [ELMCIP Knowledge Base](#), where I and many other contributors have entered and cross-referenced information about electronic literature from its beginnings until today. You will find a great deal more information about electronic literature in the 1980s and beyond in the Knowledge Base, and you are also welcome to contribute more knowledge there. There may well be omissions and mistakes in my retelling of the 1980s, and I would welcome feedback and corrections.

We welcome new contributors to the ELMCIP Knowledge Base. You can request an account from the website.

Notes

[1] I have not conducted an exhaustive analysis of all 554 mentions of "electronic literature" that Google finds in books published between 1985 and 1998. This is based on analysing the titles and surrounding text of the first thirty results, and in these, Bolter's article is the only one to use electronic literature" in its current sense.

[2] Unfortunately I have not been able to access the full text of the article from the *Print Collector's Newsletter*, and the snippet that I can view from Google Books does not show the author or title of the essay in question. However, in an email after seeing a preprint version of this article, Mark Bernstein suggested that the full reference may be Nancy Princenthal, "Artists Book Beat", *Print Collector's Newsletter* 23 (2) May-June, 1992. pp. 67-69. Bernstein also reports that a search in his personal email archives found numerous uses of the term "electronic literature" in the mid-nineties, suggesting that the term was in more current use than Google's record of print books would indicate. Examples include "queries from a student who was writing a dissertation on "electronic literature" at Toronto in 1995, an ad from an Italian startup that uses the term in a headline from 1995. a lead to an essay by Michael Shumate titled "Electronic Literature Comes To Duke" in the Spring 1995 issue of Duke's alumni magazine, and a lead to a "conference on electronic literature" named "Version 2.2" that was to be held in Geneva, Switzerland on May 31, 1995."

[3] We have accepted all applications for contributor's accounts from people who have any legitimate interest in the field: students, scholars and writers. We have only turned down people who are clearly spammers and have no record of engagement in the field whatsoever.

[4] These and other publishers all have records in the ELMCIP Knowledge Base, with some publications from each attached. We would appreciate contributions from others who know more about the period, publishers and works.

[5] *afternoon* was first presented at the ACM Hypertext conference in 1987.

[6] On Twitter on January 13, 2012, Mark Bernstein promised new versions of Storyspace fictions to work in Lion OS for Macs in the Autumn of 2012, and wrote that iPad versions were on their way: "[@jilltxt](#) [@stevehimmer](#) windows: use xp compat mode. Lion: new editions will be out by fall. iPad coming too."

One reason for the [Electronic Literature Collection](#) being published with a Creative

Commons licence was to allow future readers the freedom to create their own ways of accessing the works when the Flash and XHTML of the early 2000s is no longer accessible. The PAD program for the Preserving, Archiving and Dissemination of Electronic Literature is one initiative that attempts to provide better frameworks to solve the question of technological obsolescence.

[7] Examples are Amanda Goodenough's childrens stories *AmandaStories* (1991), James Petrillo's *Cinema Volta* (1994) and Laurie Anderson's *Puppet Motel* (1995).

Works Cited

Aarseth, Espen J. *Cybertext: Perspectives on Ergodic Literature*. Baltimore: Johns Hopkins UP, 1997.

Bernstein, Mark. E-Mail Interview with Judy Malloy. "The History of Hypertext Literature Authoring and Beyond." *Authoring Software: Application Software of Electronic Literature and New Media*. Ed. Judy Malloy. Aug. 2010. 20 Feb. 2012 <http://narrabase.net/bernstein.html>

Bernstein, Mark. Personal Interview with Jill Walker Rettberg. June 29, 2011. Unpublished.

Bolter, Jay D. "The Idea of Literature in the Electronic Medium." *Computers in the Liberal Arts* 39 (1985). Washington, PA: Washington and Jefferson College. 23-34.

———. *Writing Space: The Computer, Hypertext, and the History of Writing*. Hillsdale, NJ: Lawrence Erlbaum, 1991.

Bolter, Jay D., and Michael Joyce. "Hypertext and Creative Writing." Proceedings of the ACM Conference on Hypertext. Chapel Hill, North Carolina, 1987.

Coover, Robert. "The End of Books." *The New York Times Book Review* 21 June 1992.

———. "Literary Hypertext: The Passing of the Golden Age." *Proceedings of Digital Arts and Culture*. Atlanta, GA, 1999.

Cortazar, Julio. *Hopscotch*. 1967. Trans. Gregory Rabassa. London: Harvill P, 1998.

Crowther, William, and Don Woods. *Colossal Cave Adventure*. Computer Game. 1976.

Eisenstein, Elizabeth. *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early-Modern Europe*. Cambridge: Cambridge UP, 1979.

Emerson, Lori. "On E-Literature as a Field." *Reading Writing Digital Textuality*: loriemerson.net. Blog. Parts 1 and 2. Oct. 12 and 15, 2011. 20 Feb. 2012 <http://loriemerson.net/2011/10/12/on-e-literature-as-a-field/>

Hayles, N. Katherine. "Electronic Literature: What is it?" Electronic Literature Organization: Publications. 2 Jan. 2007. 20 Feb. 2012 <http://eliterature.org/pad/elp.html>

Jackson, Shelley. *Patchwork Girl*. Watertown, MA: Eastgate Systems, 1995.

Joyce, Michael. *afternoon, a story*. Watertown, MA: Eastgate Systems, 1990.

———. Interview with Gabriela Redwine. Harry Ransom Center. Apr. 2009. 20 Feb. 2012 <http://www.hrc.utexas.edu/ransomedition/2010/spring/borndigital.html>

Kendall, Robert. "Writing for the New Millennium: The Birth of Electronic Literature." *Poets & Writers*, Nov./Dec. (1995). *Word Circuits* 1995. 20 Feb. 2012 <http://www.wordcircuits.com/kendall/essays/pw1.htm>

Kirschenbaum, Matthew. *Mechanisms: New Media and the Forensic Imagination*. Cambridge, MA: MIT P, 2008.

Lye, Len. *Trade Tattoo*. Film. 1937.

Malloy, Judy. "Uncle Roger: An Online Narrabase." *Leonardo* 24.2 (1991). 195-202.

McDaid, John. *Uncle Buddy's Phantom Funhouse*. Watertown, MA: Eastgate Systems, 1992.

Michel, Jean-Baptiste, Yuan Kui Shen, et.al. "Quantitative Analysis of Culture Using Millions of Digitized Books." *Science* 331.6014 (2011). 176-182.

Moretti, Franco. *Graphs, Maps, Trees: Abstract Models for Literary History*. London: Verso, 2005.

Moulthrop, Stuart. "Traveling in the Breakdown Lane: A Principle of Resistance for Hypertext." *Mosaic* 28.4 (1995). 55-77.

———. Personal Interview with Jill Walker Rettberg. June 22, 2011. Unpublished.

Nabokov, Vladimir. *Pale Fire*. London: Weidenfeld and Nicholson, 1962.

Nelson, Ted. *Literary Machines: The Report on, and of, Project Xanadu Concerning Word Processing, Electronic Publishing, Hypertext, Thinkertoys, Tomorrow's Intellectual Revolution, and Certain Other Topics Including Knowledge, Education and Freedom*. Sausalito, CA: Mindful Press, 1980.

Pavić, Milorad. *Dictionary of the Khazars: A Lexicon Novel in 100,000 Words*. Trans. Christina Pribicevic-Zoric. London: Penguin, 1984.

Raley, Rita. "The Digital Loop: Feedback and Recurrence." *Leonardo Electronic Almanac* 10.7 (2002). 20 Feb. 2012 http://leoalmanac.org/journal/Vol_10/lea_v10_n07.txt

Rettberg, Scott. "Bokstaver i bevegelse." *Vagant* 1/2011.12-3. "Letters in Space, at Play." "Reading the Web: retts.net. 1 June (2011). 20 Feb. 2012 <http://www.retts.net/index.php/2011/02/letters-in-space-at-play>

Saporta, Marc. *Composition No. 1*. 1962. Trans. Richard Howard. New York: Simon and Schuster, 1963.

Walker, Jill. "Piecing Together and Tearing Apart: Finding the Story in 'afternoon'." *Proceedings of Hypertext and Hypermedia '99*. Darmstadt, Germany. 21-25 Feb. 1999. New York: ACM P, 1999.111-7.

Wardrip-Fruin, Noah. "Christopher Strachey: The First Digital Artist?" *Grand Text Auto*. 1 Aug. 2005. 20 Feb. 2012 <http://grandtextauto.org/2005/08/01/christopher-strachey-first-digital-artist>

Weizenbaum, Joseph. "ELIZA: A Computer Program for the Study of Natural Language Communication between Man and Machine." *CACM* 9.1 (1966).

dichtung-digital